

REMARKS

Claims 1-26, 28-33, 36 and 41-47 are pending in the application. Claim 22 is objected to for informalities. Claims 1-2, 4-16, 18-20, 28-33, 36 and 41-47 are rejected under 35 U.S.C. 102(b). Claims 3, 17 and 21-26 are rejected under 35 U.S.C. 103(a). Claim 22 is amended to correct minor infelicities. Claims 1, 15, 22, 23, 28, 30, 31, and 36 are amended to clarify what is claimed as the invention. No new matter has been added to the application. Applicants respectfully request reconsideration of the objections and rejections in view of the following remarks.

Claim Rejection under 35 U.S.C. 102

Claims 1-2, 4-16, 18-20, 28-33, 36, and 41-47 are rejected under 35 U.S.C. 102(b) as being anticipated by Fortin, USPN 5,528,753. Applicants respectfully disagree.

Fortin describes a system and method for monitoring a target routine in a program executable on a computer system where the program is stripped of any linkable information. Specifically, Fortin describes the use of an entry routine and an exit routine to monitor a particular target routine in a stripped program. Control is passed to target routine when the target routine is called. Control is temporarily passed to entry routine, which collects information desired by a monitor and returns control to the target routine. The target routine then executes and exits. Control is temporarily passed to the exit routine before exiting from the target routine so that the exit routine can collect additional data. Thus, according to Fortin, control must first pass to the target routine and must then pass to the exit and entry monitoring routines. Also, the target routine always executes in conjunction with the monitoring routines.

Independent Claims 1, 15, 28-31, 36 and 41

The Office Action rejected independent Claim 1 by citing a procedure described in Fortin for monitoring a routine. Claim 1, as amended, teaches "a computerized method for creating an instrumented executable file, the method comprising: modifying an executable file to invoke a user-supplied function in place of an original function; and retaining access information of the original function, the access information enabling the user-supplied function to invoke the original function." The method taught by Claim 1 is significantly different from the procedure in Fortin cited by the Office Action.

The procedure in Fortin is directed to the sequential execution of a target routine, an entry routine, and an exit routine when the target routine is called. Fortin does not disclose anything about "modifying an executable file to invoke a user-supplied function in place of an original function" as recited in Claim 1.

The procedure in Fortin also fails to describe "retaining access information of the original function, the access information enabling the user-supplied function to invoke the original function" as recited in Claim 1. Fortin discloses that the entry and exit routines "allow the function of a target routine to be fully replaced such that the newly provided code will be executed instead of the base code in the routine being monitored." (col. 4, lines 62-65) Thus, the Fortin procedure is different and, more significantly, does not anticipate the method as recited in amended Claim 1. For the reasons stated above, applicants respectfully submit that the invention recited in independent Claim 1 is not anticipated or rendered obvious by Fortin and is allowable.

The Office Action rejected independent Claim 15 by essentially citing the same procedure in Fortin that the Office Action used to reject Claim 1. Independent Claim 15, as

amended, teaches a "computerized method for executing an instrumented executable file comprising: modifying the instrumented executable file to invoke a user-supplied function in place of an original function, the user-supplied function having a jump to the original function; saving the address of the original function in a threaded local storage variable; and invoking the user-supplied function using the address."

As discussed above, Fortin merely describes a procedure for monitoring a target routine by passing control to entry and exit routines for data collection. Fortin does not disclose modifying the instrumented executable file to invoke a user-supplied function in place of an original function. Furthermore, Fortin does not disclose saving the address of the original function in a threaded local storage variable and invoking a user-supplied function using the address. The Office Action cites a "'Return to Target Routine' section...[that] ensures that all target routine instructions are executed in the proper order." (col. 6, lines 1-5) This passage is significantly different from applicants' invention as claimed in Claim 15. Thus, applicants respectfully submit that the invention taught by independent Claim 15 is not anticipated or rendered obvious by Fortin and is allowable.

Claims 28, 29, 36 and 41, as amended, contain essentially the same limitations as Claim 1. The Office Action rejected Claims 28, 29, 36 and 41 for the same reasons that Claim 1 was rejected. As discussed above, Claim 1 is allowable. Thus, Claims 28, 29, 36 and 41 are allowable for at least the same reasons that Claim 1 is allowable, and notice to that effect is solicited.

Claim 30, as amended, teaches "instrumenting the executable file by modifying the executable file to invoke the identity of the user-supplied function in place of the identity of

the original function.” As previously discussed, Fortin does not disclose modifying the executable file to invoke the identity of the user-supplied function in place of the identity of the original function. Thus, applicants respectfully submit that the invention taught by independent Claim 30 is not anticipated or rendered obvious by Fortin and is allowable.

Claim 31, as amended, teaches “a second module comprising the user-supplied function, linked to the first module...” Fortin does not disclose the limitations taught by applicants’ Claim 31. Instead, Fortin recites that the first instruction of the stored target routine “is executed in the “Return to Target” section and control branches to the second instruction if the target routine.” (col. 6, lines 56-58) This passage makes no mention of a user-supplied function or a link to a first module. Thus, applicants respectfully submit that the invention taught by independent Claim 31 is not anticipated or rendered obvious by Fortin and is allowable.

Claim Rejection under 35 U.S.C. 103

Claims 3 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fortin, USPN 5,528,753. Claims 21-26 were rejected under 35 U.S.C. 103(a) as being unpatentable over Fortin, USPN 5,528,753, and further in view of Peek, USPN 5,481,706. As discussed above, Fortin describes a system and method for monitoring a target routine in a program executable on a computer system where the program is stripped of any linkable information. Peek discloses the use of a wrapper which is “an individual piece of code placed around a corresponding individual function call or routine which is exported from the shared library.”

Independent Claims 21 and 23

Claim 21 teaches "adding a wrapper of the imported function to an import data block; [and] adding a stub function for the imported function wherein the stub function comprises an instruction that saves the address of the import function to a threaded local storage variable and replaces an access to the import function with an access to the user-supplied function..." Claim 23, as amended, teaches "modifying an embedded function to invoke a user-supplied function using a wrapper..."

As discussed above, Fortin does not disclose replacing an access to the import function with an access to the user-supplied function. The Office Action states that "Fortin does not explicitly teach an imported function, a stub function for the imported function for the imported function, and adding a wrapper of the imported function to an import data block." (Office Action, page 21, lines 8-9). Official Notice was taken by the Office Action that including a stub function for an imported function was common practice at the time the invention was made and that Peek teaches adding a wrapper of a function to a data block. Applicants respectfully disagree and challenge the assertion that including a stub function for an imported function was common practice, and respectfully request the Examiner to produce authority for this statement. Furthermore, Fortin does not provide any suggestion or motivation to combine a stub function and a wrapper to the disclosure of Fortin. Thus, applicants respectfully submit that independent Claims 21 and 23 are not rendered obvious by any combination of Fortin and Peek and are, therefore, allowable.

Dependent Claims 2-14, 16-26, 32, 33 and 42-47


As discussed above, Independent Claims 1, 15, 28-31, 36 and 41 are allowable. Thus, Dependent Claims 2-14, 16-26, 32, 33 and 42-47 are allowable for at least the same reasons that the base claims on which they rely are allowable, and notice to that effect is solicited.

CONCLUSION

Applicants respectfully request that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

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